PHENIX Technical Support 2006

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WEEKLY PLANNING

4/20/06

Don Lynch

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Safety

We have lost a whole week of running because of a violation of procedure and not because of the accident itself.

Make sure you wear your protective equipment

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This Week

- Removed BLM test
- Installed HBD prototype

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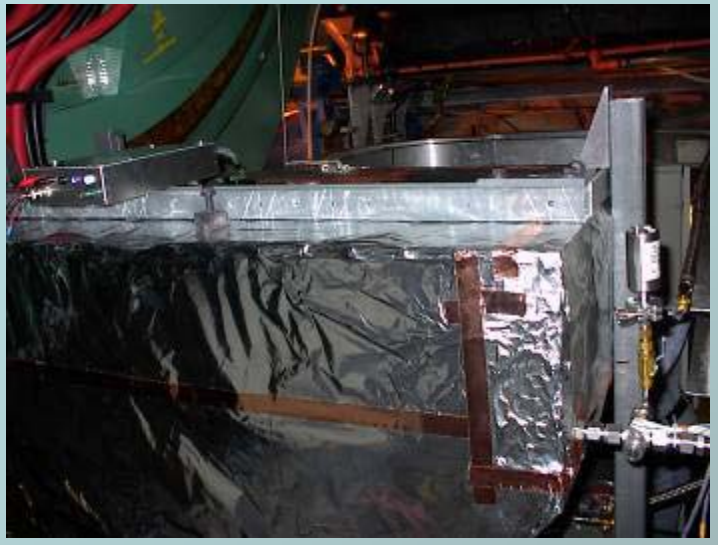
HBD Prototype Installation low position



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HBD Prototype Installation After Action Discussion

- Purpose
  - Improve planning for prototype move to run position
  - Improve planning for final detector installation
  - Improve planning for other detector upgrades
- General Observations
  - Prototype installation – last minute changes are inevitable
  - Mid run installation – time and space constraints are more critical
  - Tech Staff and Detector crew worked well together accomplished task as planned despite difficult nature
- Specific Observations
  - UV lamp required mounting, electrical, magnetic and gas provisions not specifically planned for
  - Use of multiple vendor fittings on prototype
  - Number of persons in small area

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Planning Improvements

- Prior to installation
  - Checklist (to be filled out by detector group & staff)
    - Cables: type, number, length, connectors, ratings, bend radii
    - Gas: type, lines, connections, special requirements
    - Dimensional outline including, mounting, protective cover(s), electronics and other appendages
    - Special handling requirements including orientation, internal atmosphere, cg
    - Radiological
    - Magnetic
    - Test equipment and support for test equipment
    - Installation tools and fixtures
- During installation
    - Oversight
    - Change requests
    - Out of scope changes

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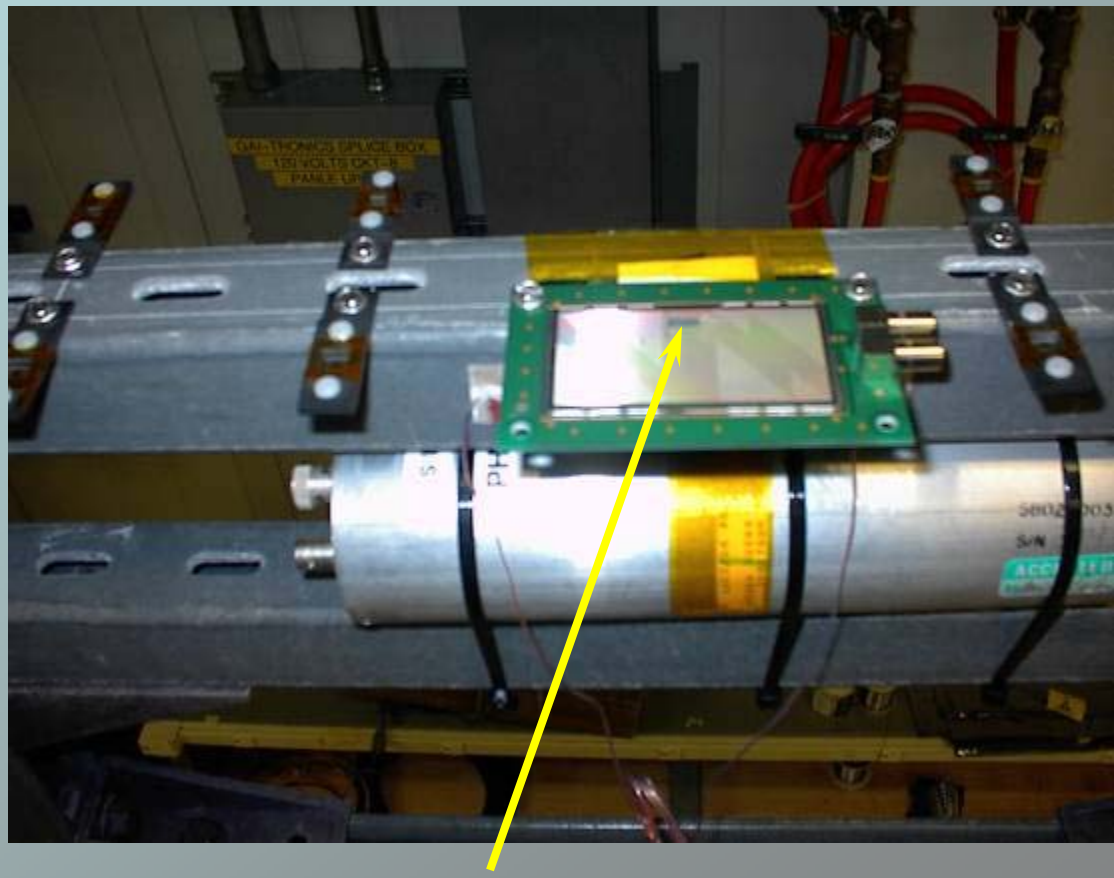
BLM



Damaged strip pixel sample

What's Next?

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Next Week

- Continue prep for HBD prototype move to run position
- HBD prototype check out tests
- New detector work (TOF West handling fixtures, HBD support structure, RXNP design, MPC North design)

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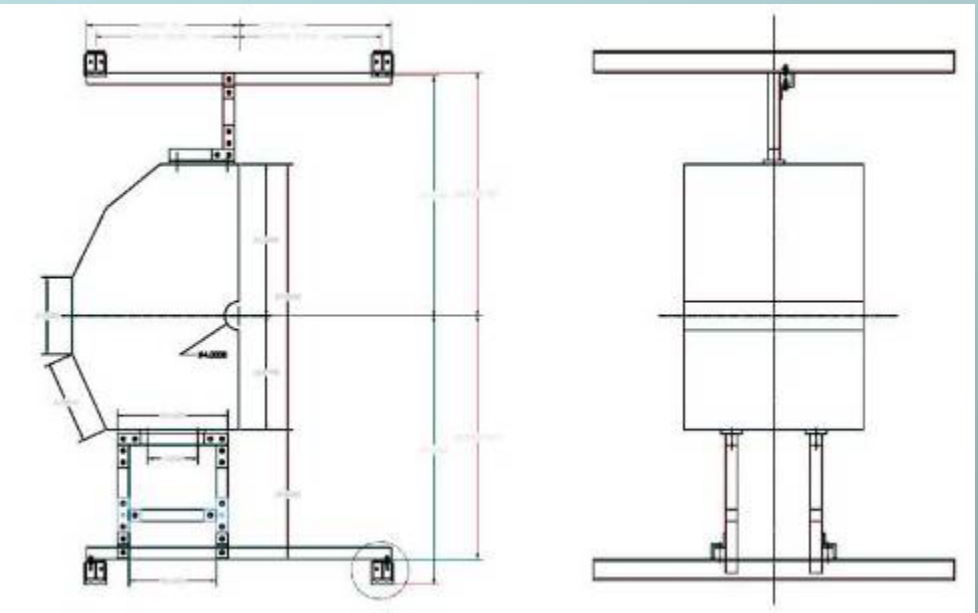
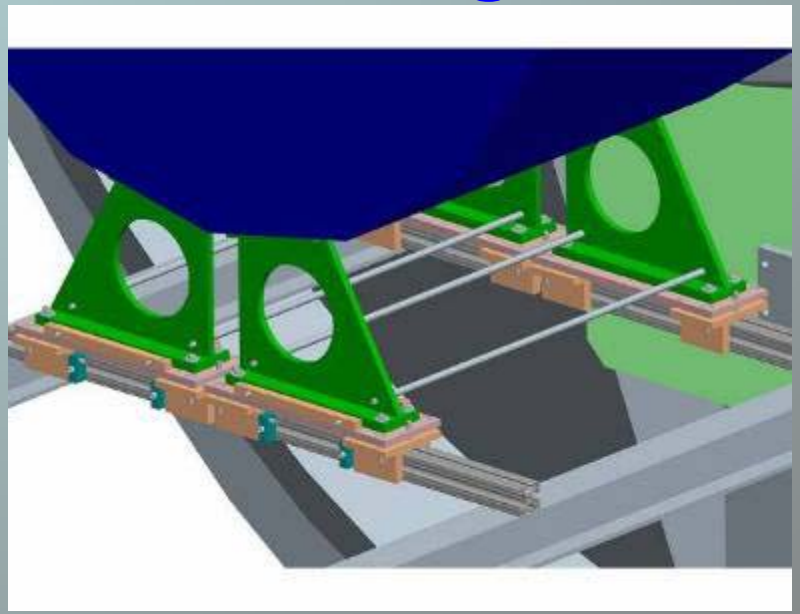
HBD Prototype Run Position Mounting





Prototype can not use final design mounting due to differences in location of connectors and other basic design differences.

Prototype mounting to be fabricated from fg unistrut.

Design of full detector details nearly complete and ready for fabrication.

3D model received from WI

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HBD Prototype

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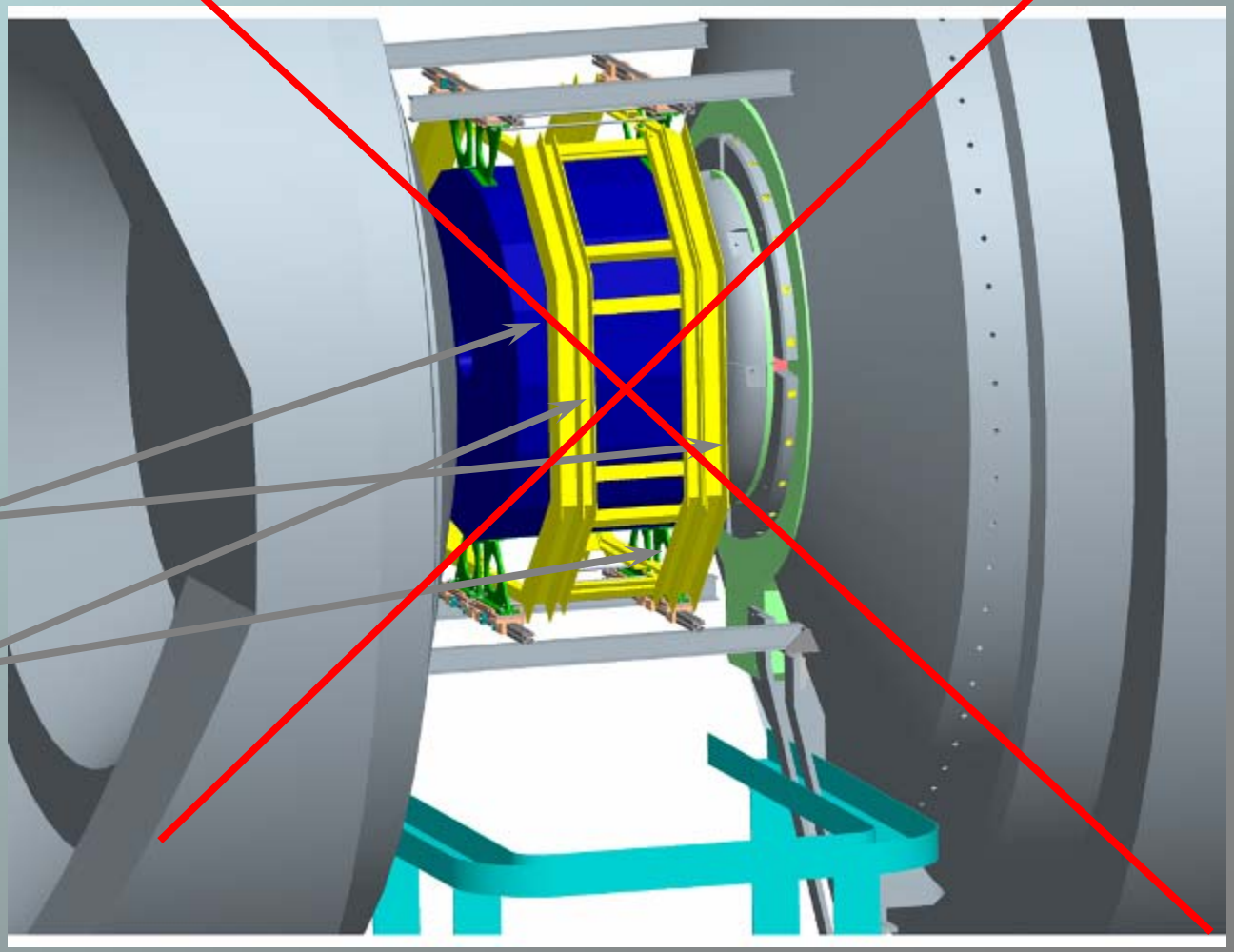
HBD Cable Management Scheme (1st take)

Flexible panduit cable trays mounted to rigid fiberglas unistrut backbone provide support and strain relief for 156 cable bundles (6 north and 6 south for each of 6 facets on each ½ detector.

3" x 3" panduit for signal cables

2" x 2" panduit for HV cables



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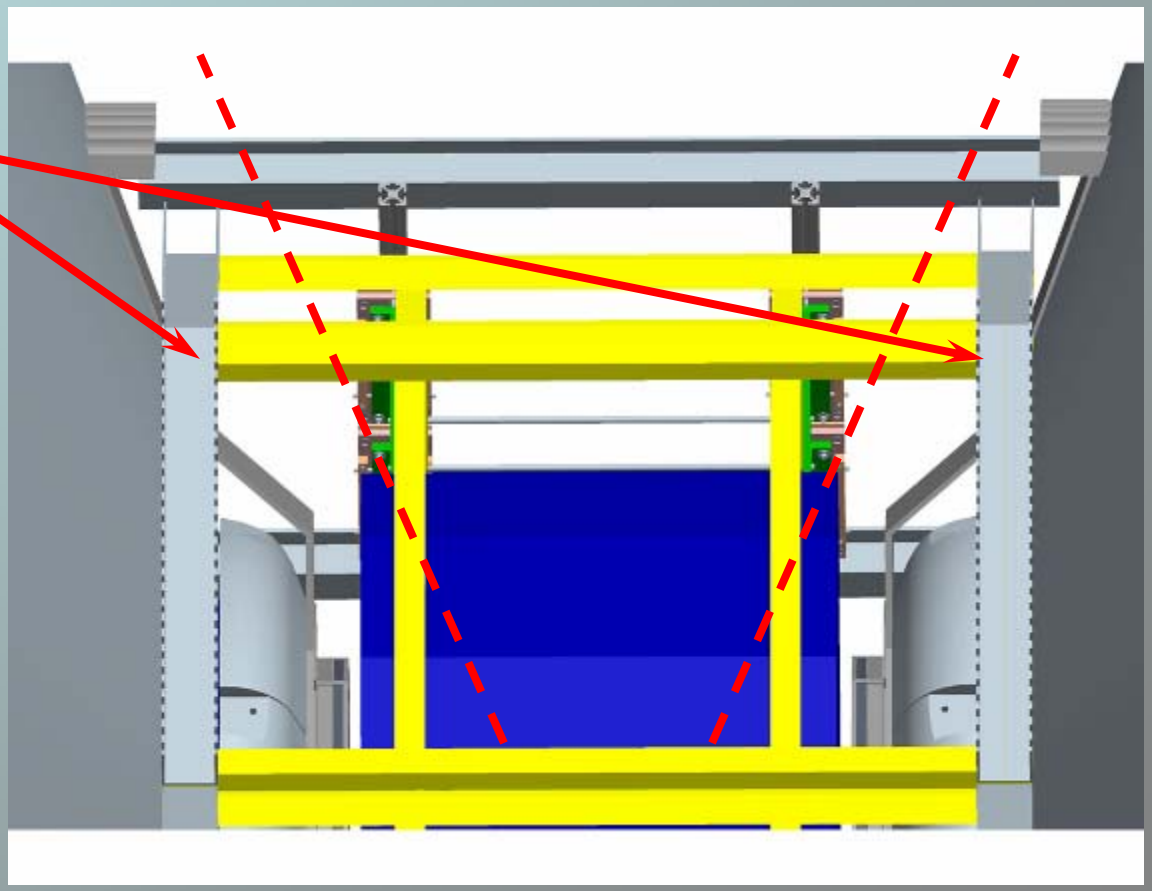
HBD Cable Management Scheme (Take 2)

Cable Trays moved out of acceptance



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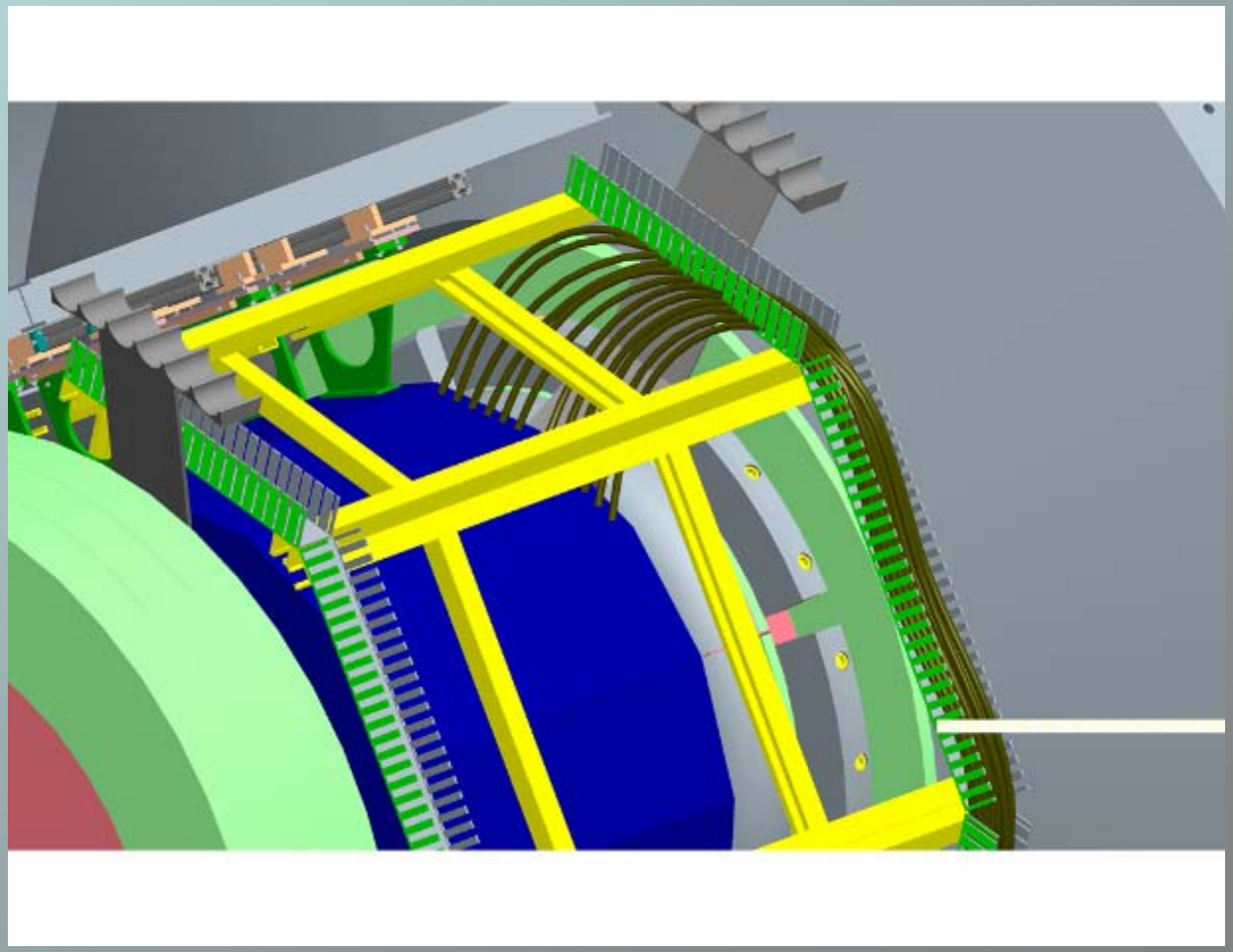
HBD Cable Management Scheme (Take 2)

Signal/LV Cables

12 cables are illustrated out of 156 total

PMT's, Cables and Fibers for RXNP are not shown



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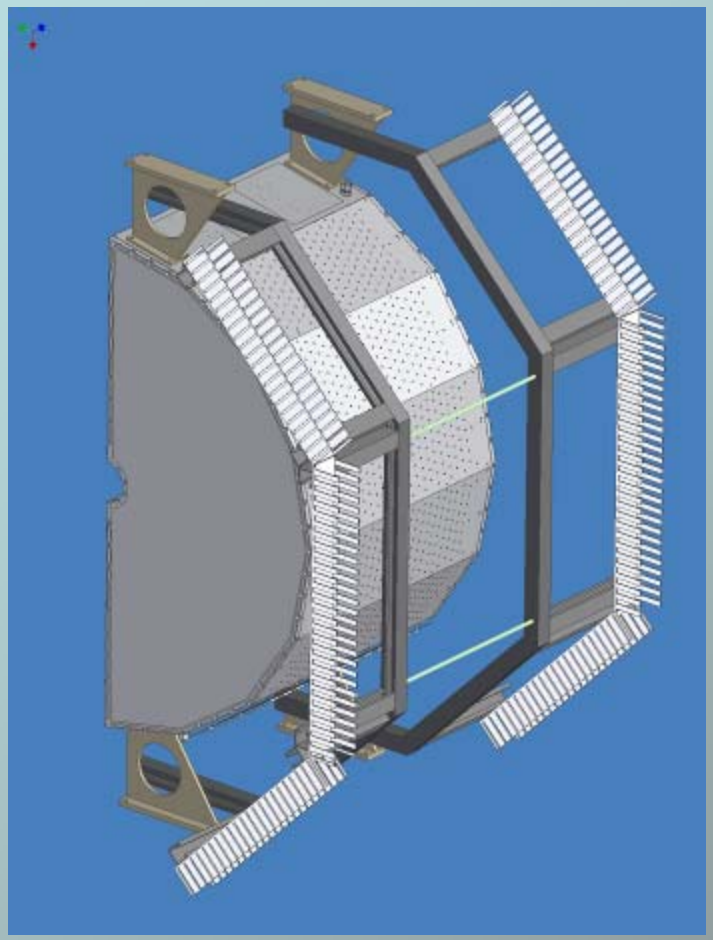
HBD Cable Management Scheme (Take 3)



Moved some support out of acceptance.

Still needs work

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Next Access Day

- Expect next access day (8 hrs) to be ???
- May be shorter controlled accesses before then
- Subsystems must arrange for tech assistance prior to access day or don't expect assistance. (see Don Lynch or John Haggerty)
- PHENIX Techs only on CM lift platform unless accompanied by PHENIX Tech (Lift platform is locked and will remain locked even after BLM stand is removed)
- Planned:
    - More MPC electronics work?
    - HBD system tests
    - Reinstall partial BLM
    - HBD Prototype moves to run position

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Other Projects

TOF West

- Expect detectors to be at BNL by June 1.

MPC North

- Design discussed this week. Drawings being collected.

Muon RPC

- Moving toward CDR in summer '06

Beampipe design

- Conceptual design needs tweaking. New spec control drawing needed.

New CM Crane

- Nothing new

Engineering Documentation

- Documentation/Drawings data base with web based retrieval
- 3D model at detector outline level with utility envelopes
- utility schematics

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Reaction Plane Detector (RXNP)

Lead converter

Outer spacer (6 per quad)

Outer scintilator (3 per quad)

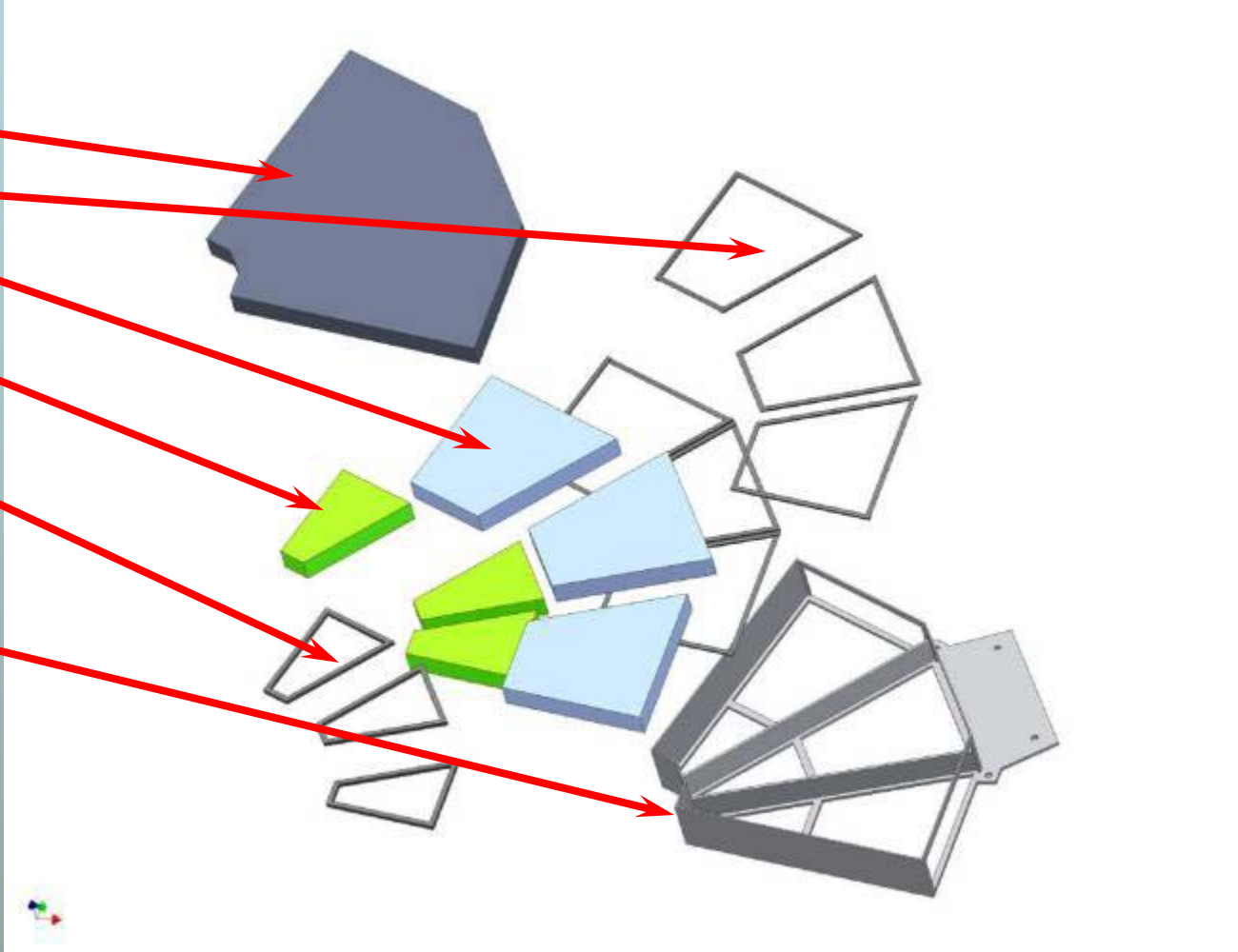
Inner scintilator (3 per quad)

Inner spacer (3 per quad)

Tray

4 quads per assy

North and South assy's



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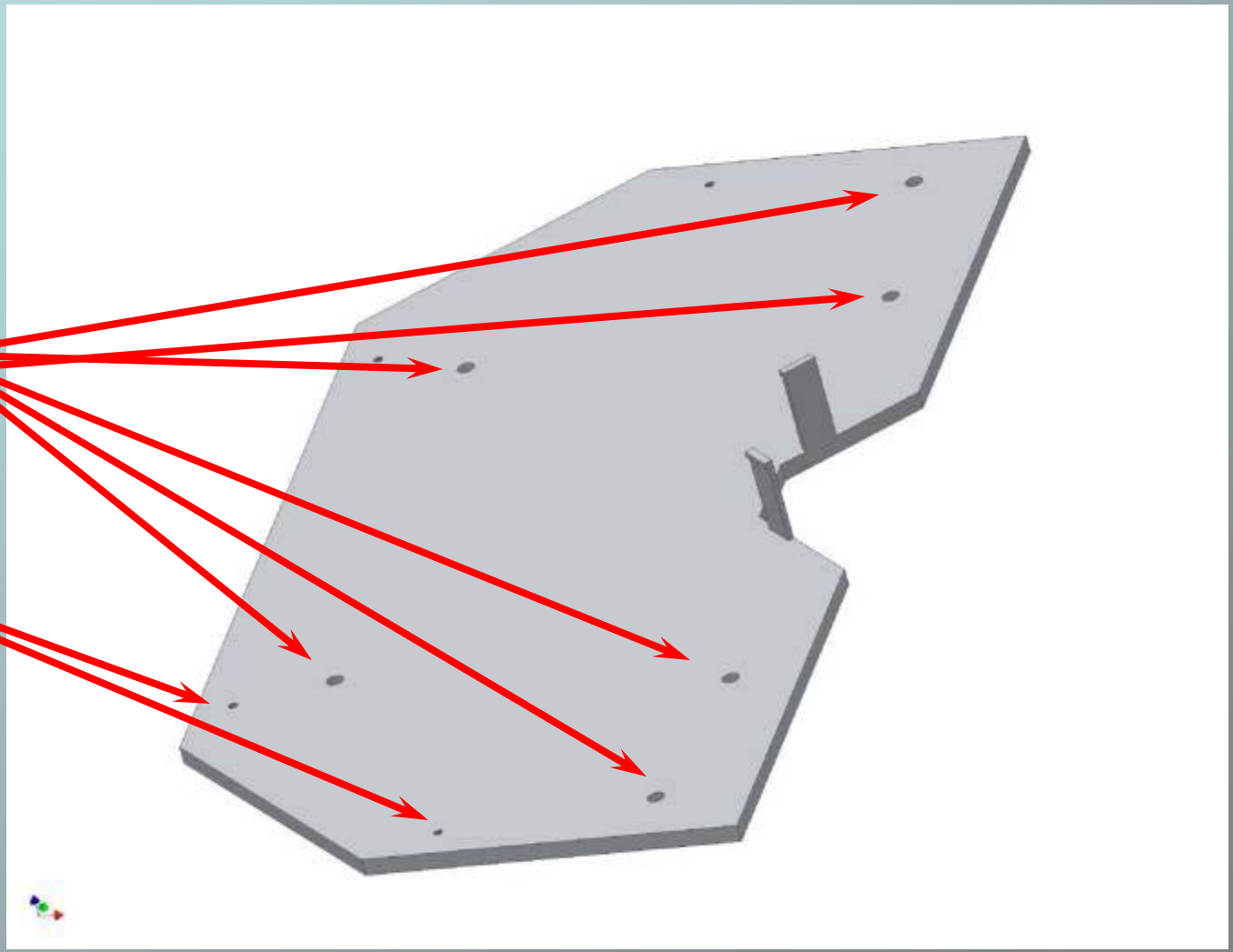
Base Plate 3/8 alum

2 per assembly. Mounts to existing $\frac{1}{4}$-20 holes on Brass nosecone.

Quads are then mounted to Base Plate



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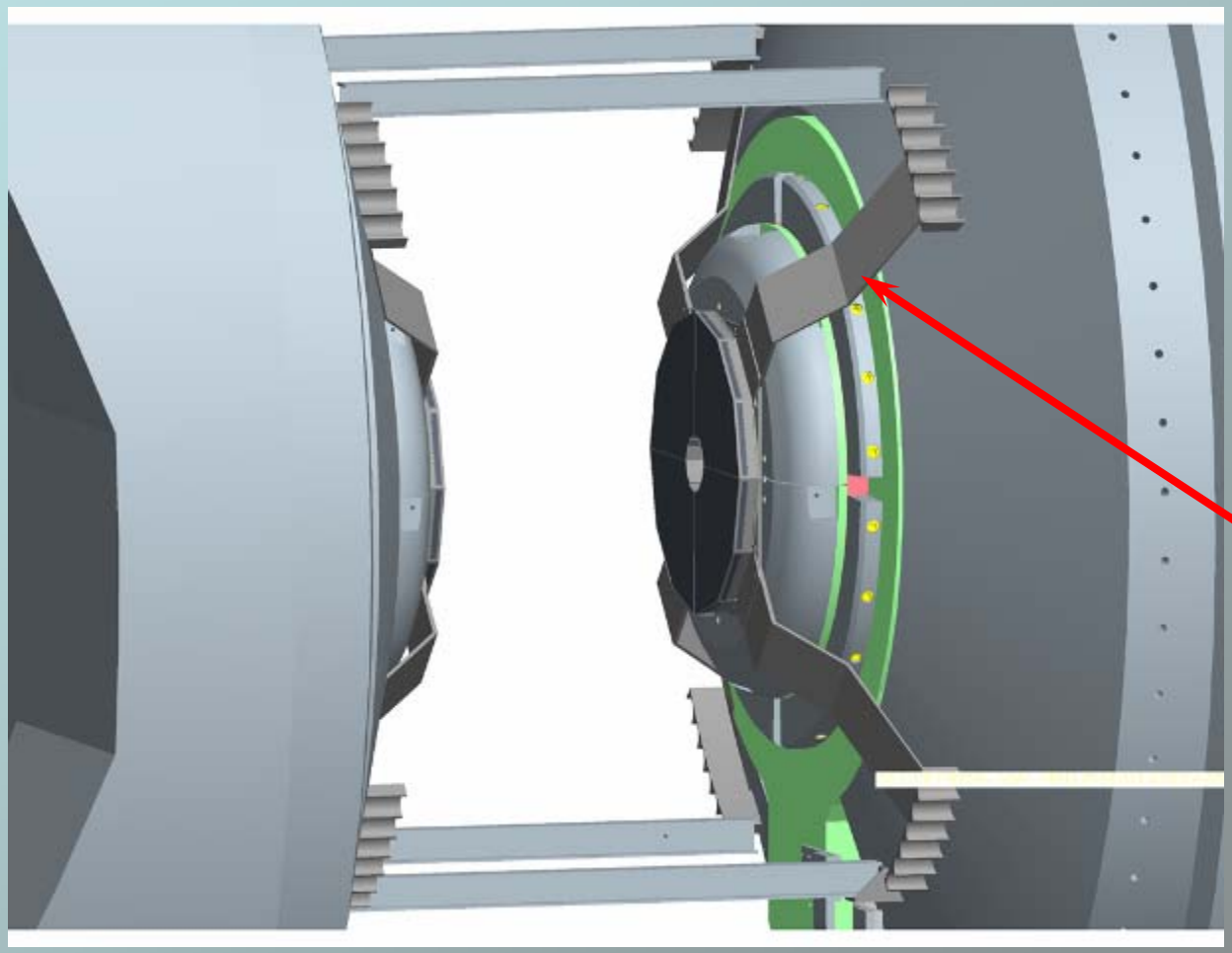
RXNP DETECTOR



North and south detectors each with 4 arms to PMT's (6 on each arm at 111 cm radius)

Arms now have jog to accommodate HBD

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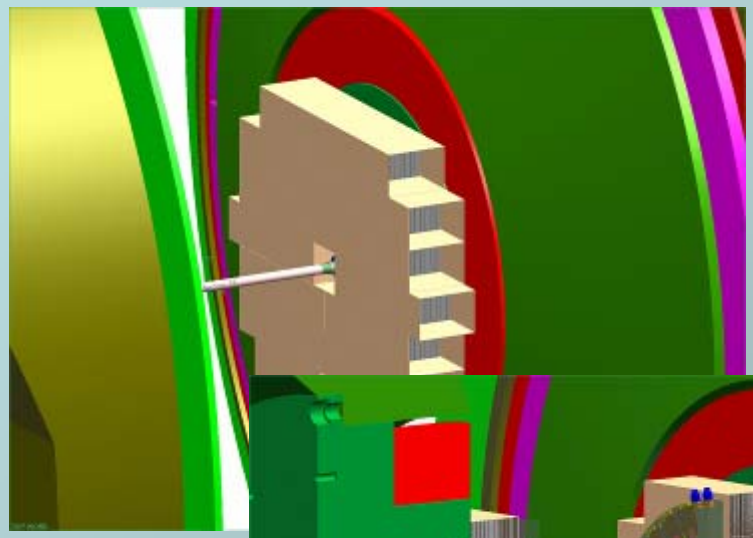
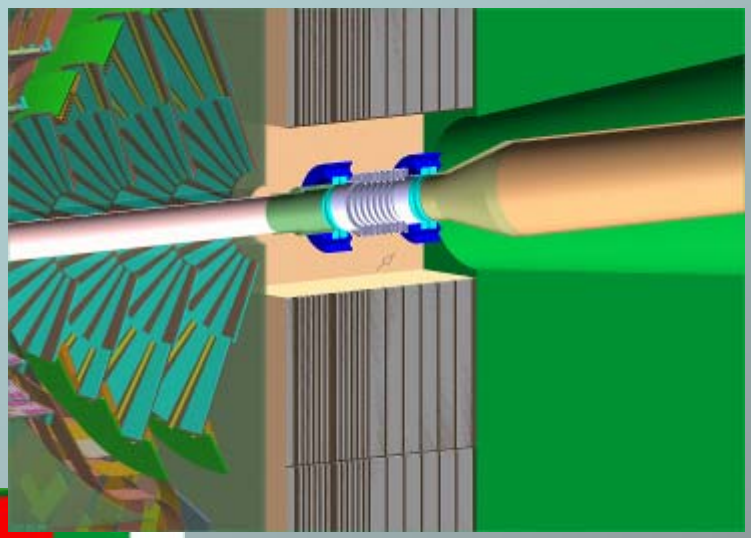
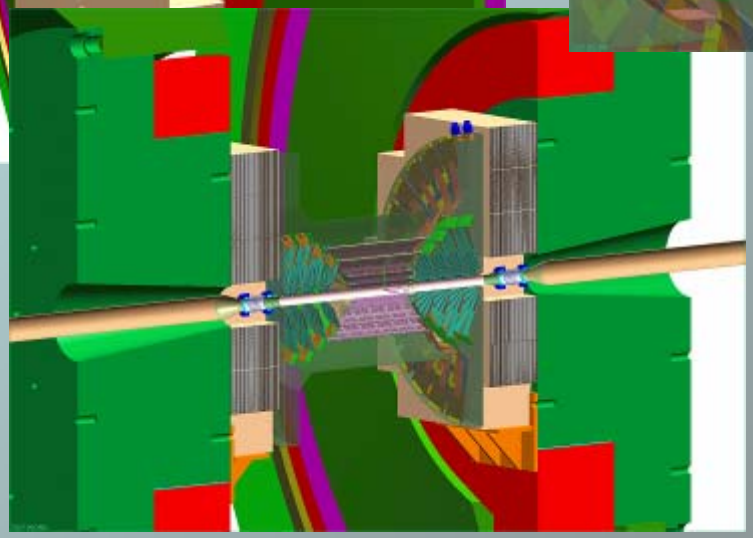
New Beampipe for Upgrades







CA Coordination meeting findings:

1. Min radial clearance for VTX = 25 mm
2. Min Be ID = 40 mm
3. Be wall = 0.5 mm (4.4 mm min clearance)
4. Be ID to be neg coated at BNL
5. Be OD to be epoxy coated by Vendor
6. Requires supports at both bellows
7. Stress analyses needed (axial stress, vacuum breach shock stress and thermo-mechanical stresses during bakeout
8. RF analysis of bellows needed (shields?)

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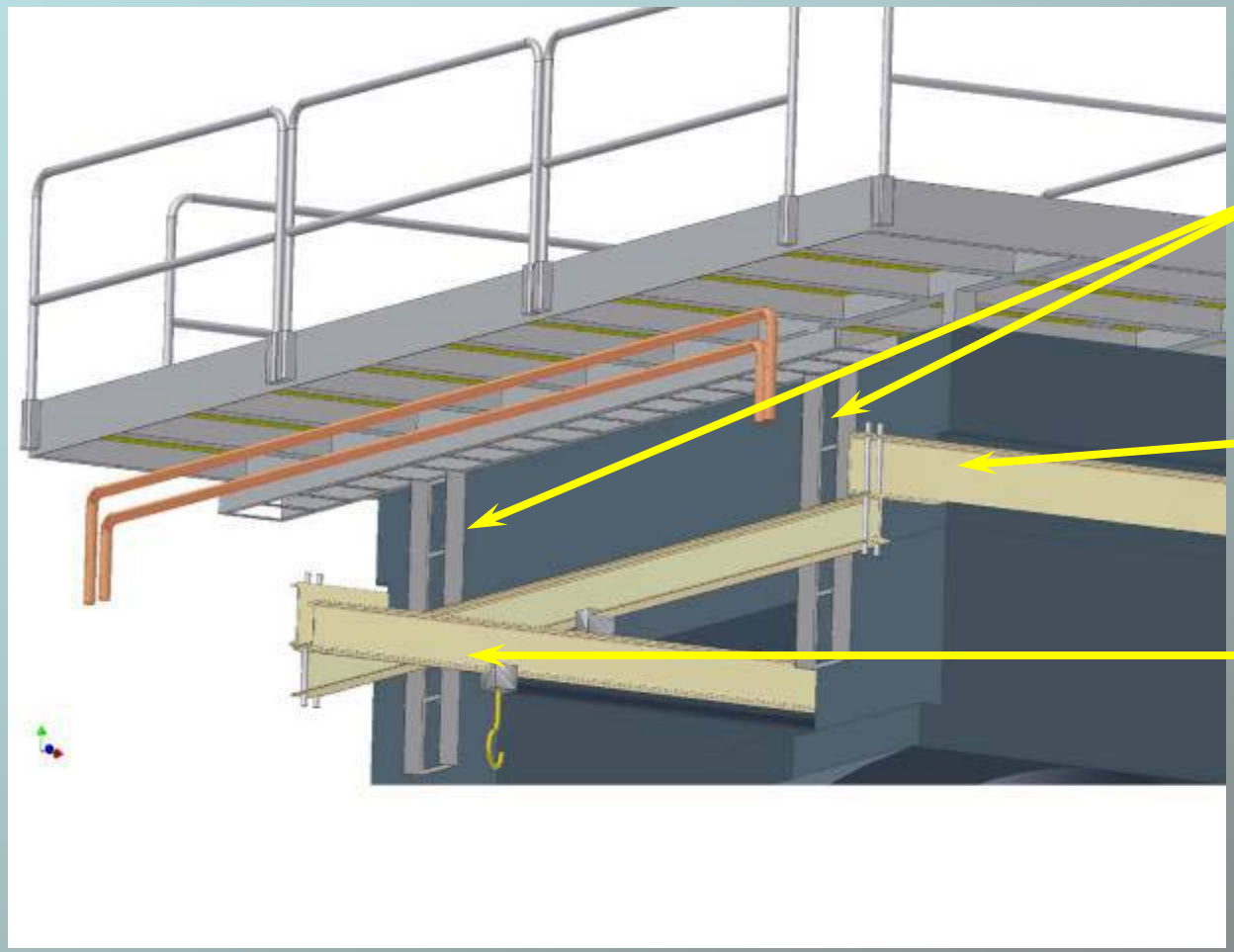
CM Region Crane & Cable Routing Concept



Cable Trays to route cables NCC Detector from Bridge

Crane Supports use existing flux return notches

CM Crane north-south & east-west motions; extended travel east to existing crane coverage

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C-A Tasks

Current Tasks

- General run support
- New storage trailer (as promised)
- Fix roof leaks

Tasks for Shutdown 2006

- Install access platforms from EC top north and MMS
- Replace emergency fan louvres
- Rewire/add IR ceiling lights on emergency power
- Replace WC sliding platform hoisting cables
- Mixing house exhaust fan maintenance

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MOLD Problems

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Shutdown 2006

- June '06: end run 5, prep for start of shutdown, prep EC for move to AH
- July '06: TOF West installation, RXNP installation
- Aug. '06: MPC North installation, HBD installation
- Sep. '06: Detector subsystems maintenance, roll EC in, prep for run 6
- Oct. '06: Plan to start cooldown on Oct. 15th

Subsystems: Get requests for maintenance in early to get on theschedule

Links for weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found from the web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

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